Course: COMP 182
Term: Spring 2020

Instructor Contact Information

Instructor: Luay Nakhleh
Office: Duncan Hall 3131
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Office Hours: Wednesday 2:00-3:00 mm and Thursday 1:30 – 3:00 pm

Course Objectives and Learning Outcomes

The objective of the course is to introduce Algorithmic Thinking as a way of problem solving. To achieve this, the course teaches discrete mathematics and algorithms in the context of real-world applications. The goal is for students to learn the foundations on which most of computer science is built and to understand the interplay between mathematics, algorithms, and programming.

Required Texts and Materials

The textbook is "Discrete Mathematics and Its Applications" (7th Edition) by K. Rosen. McGraw-Hill.

The topics we cover include:

- The foundations: Logic and proofs
- Basic structures: Sets, functions, sequences, sums, and matrices
- Algorithms and algorithmic techniques: Brute-force, graph exploration, divide-and-conquer, greedy algorithms, dynamic programming, heuristic searches, and probabilistic algorithms
- Complexity of algorithms and asymptotics
- Induction and recursion
- Counting
- Discrete probability
- Relations
- Graphs and graph algorithms
- Trees

Exams and Papers

There are two scheduled exams:

- A midterm: March 2, 2020, 7:00 – 10:00 pm
- A final exam: Scheduled by the registrar's office (3 hours)

There is a set of 6-7 homework assignments.

Grade Policies

- Midterm: 30%
- Final: 30%
- Homework assignments: 35%
- Attendance: 5%

Assignment of letter grades will be *no stricter than* the following:

- A: final grade ≥90
- B: 80 ≤ final grade < 90
- C: 70 ≤ final grade < 80
- D: 55 ≤ final grade < 70
- F: final grade < 55

Absence Policies

Attendance will be taken on randomly selected days. It is the student's responsibility to inform the instructor, ahead of time if possible, about absences.

Rice Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

Additional policies that are specific to COMP 182 include, but are not limited to:

- While collaboration is allowed, all submitted work (homework and exams) must be your own and written in your own words.
- You may not search for solutions to homework questions.
- You may not access solutions to homework assignments, no matter what the source is (you must not obtain solutions from students who took the course in previous semesters, search for them online, etc.).
- You may not post your solutions in the public domain (e.g., if you choose to store your work on sites such as github, you must do so by creating a private, password-protected account, and storing your work in it).
- You may not give access to your own solutions to other students.
- You may not use online forums (except for the comp 182 forum) to ask questions about homework material or ask for help.

Disability Support Services

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

Syllabus Change Policy

This syllabus is only a guide for the course and is subject to change with advanced notice.

Additional Informtion

This semester your instructor will be conducting a study looking at teaching and learning. The purpose of this study is to determine the factors that influence teaching effectiveness and learning. Your participation in this study will last for the duration of the current semester and will entail activities no different from the regular activities you would otherwise engage in as part of the course. If you would like more information, please do not hesitate to ask. If you would like to opt out of the study, please talk to me as soon as possible.